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A NEW METHOD  
OF  
RECTAL MEDICATION.

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ADVANTAGE has long been taken of the absorbent power of the rectum as a means of obtaining the peculiar effect of a remedial agent upon the system ; and, although the rectum, as an absorbing surface, is inferior to the stomach, medicines are frequently introduced by this organ with great benefit in cases of inability to swallow, irritable stomach, and in children's maladies. Unfortunately the rectum soon becomes intolerant, the mucous membrane irritable, and the medicament may be at once rejected or absorption delayed. This, and the difficulty attending the introduction of the substance through the anal aperture, guarded as it is by a tightly-closing sphincter, have always presented serious obstacles to rectal medication. Any plan, therefore, which shall to any extent remove these obstacles, and add to the utility of this important



branch of therapeutics, must be of value, and it is with this purpose in view that the new method which forms the subject of this article has been devised.

For the introduction of remedies into the rectum a vehicle of sufficient consistence to overcome the resistance of the sphincter muscle is necessary. This is obtained, in the use of solids, by mixing them with some form of hardened fat, or with soap, and such a mass moulded into convenient form for insertion is called a suppository. Medicines in the liquid state are introduced by means of the syringe, and are technically known as enemata or clysters. The chief objection to the enema is that the amount necessary for injection stimulates the natural irritability of the rectum, often causing its expulsion; to the suppository, that the fat coats the bowel and greatly retards absorption. This latter fact has been satisfactorily proven by Ellerslie Wallace, M.D., Prof. of Obstetrics in the Jefferson Medical College of Philadelphia.

Another very serious objection obtains with regard to fats as a vehicle: it is that, when sufficiently hardened for successful insertion, their fusion point is often raised higher than the temperature of the body. Such suppositories melt so slowly in the rectum as to be comparatively worthless; they may fail altogether to

soften down, and thus pass from the body unchanged; another is, that during summer in these latitudes the temperature of the weather is often above that of the body; suppositories, therefore, melting at the temperature of the body in such weather, lose consistence and turn into liquid fat.

Solutions of medicinal agents for rectal administration must be perfectly bland, a point often difficult to secure if they are injected in a condition permitting ready absorption, or they will not long be tolerated.

Consistence for insertion, concentration and blandness to prevent irritation, the use of a remedy in a condition to be readily absorbed, and the employment of a vehicle which shall not prevent absorption, are, therefore, the requirements for rectal medication. With these requirements in consideration, I have devised and beg leave to introduce the oleates for rectal medication, and the rectal capsule, a cylindro-conical case of gelatin, suppository-shaped, as a vehicle.

The great advantages claimed for the rectal capsule are: 1st. It does away completely with other vehicles for conveying the medicinal agent into the rectum, be it powder, extract, or fluid, provided that fluid is not a solvent for gelatin, the capsule itself giving the consistence,



not its contents; the vehicle being entirely unaffected by the heat of any climate, yet still very soluble in the secretion of the rectum. 2d. It enables the employment of the oleates—liquid salts already famed for their power of permeating the tissues.

Much attention was drawn to the oleates by a paper on the treatment of persistent inflammation by the local applications of solution of oxide of mercury and of morphia in oleic acid, by Mr. John F. Marshall, F.R.S., Prof. of Surgery in University College, London, published in the *London Lancet* for May 25th, 1872. The facility and rapidity with which oleates are absorbed from the skin was then something quite new in therapeutics, and subsequent research has proven his suggestion relative to the substitution of the oleates for some of the older ointments, as being cleaner, more elegant, much more efficacious, and of practical value. The oleates of the alkaloids injected beneath the skin are also easily absorbed, presenting an admirable mode for hypodermic use, and the oleates, per rectum, only need some means to convey them to the mucous surface of the bowel, where they will be far more easily absorbed than by the epidermis, and free from the objections attending the hypodermic method of medication.

In proof that some medicines enter the blood

more quickly by the rectum than by the stomach, J. Roberts Bartholow, Prof. of Materia Medica at the Jefferson Medical College, states in his work on Materia Medica and Therapeutics, that "The salts of morphia, atropia, and strychnia, in solution, are absorbed as quickly, and the last-named more quickly, by the rectum than by the stomach."\*

Rectal capsules abolish the necessity for a suppository mould and a long and difficult process, thus materially cheapening the product and increasing its utility, enabling the pharmacist to manufacture to order, with the same dispatch as in making pills, or to keep a stock on hand, securely sealed from exposure to the air, thus preventing mould or rancidity. Oleic acid is a perfect substitute for butter of cacao, or other fat, for equal diffusion of the medicinal portion, if locally irritating, without danger of retarding absorption, or, if the drug be mild and in the form of powder, soluble, or with an active principle soluble in the rectum, it may be placed dry in the rectal capsule for immediate insertion.

In relation to other properties of the rectal capsules, they are quickly soluble in water at 90° F. In water at 60° they swell up, become opalescent, very soft, and dissolve after long immersion. Filled with cold water and placed

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\* Page 9, ed. 1878.

on a plate, they lose consistence in about eight minutes, so that very moderate pressure robs them of their contents. On the tongue they dissolve and disappear altogether in about three minutes, usually less, depending on slight variation of thickness in their walls. In the rectum they melt in about four minutes, but if removed in three minutes, one side will usually be found dissolved, thus liberating their contents. If filled with any ingredient melting at the temperature of the body, the rectal capsule will not delay its fusibility, and such article, inserted by means of the rectal capsule, will surely produce its effect almost as quickly with as without it.

Finally, these facts have been substantiated by thorough tests in numerous cases in both New York and Philadelphia, in private and hospital practice.